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# Experimental Manipulation of Death Anxiety.

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EXPERIMENTAL MANIPULATION  
OF DEATH ANXIETY

A Dissertation

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Louisiana State University and  
Agricultural and Mechanical College  
In partial fulfillment of the  
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Doctor of Philosophy

in

The Department of Psychology

by

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## ABSTRACT

Relative effects of hypnosis, alpha biofeedback, prestige suggestion, and silence in attenuating experimentally induced increases in death anxiety were investigated.

Forty female undergraduate Ss at Louisiana State University were tested on four measures of death anxiety: "emotional" associations to "death" words, association response latencies to "death" versus "neutral" words, Death Anxiety Scale, and Death Concern Scale.

Ss were then assigned to four treatments: 1) hypnosis, with anxiolytic post-hypnotic relaxation suggestions; 2) non-hypnotic anxiolytic prestige suggestions; 3) EEG alpha-contingent biofeedback; and 4) a 15 minute waiting period. Hypnotic Ss scoring 7 or lower on the modified Stanford Scale of Hypnotic Susceptibility were replaced, as were biofeedback Ss who failed to increase percent-time alpha and/or alpha amplitude.

Following treatments, Ss viewed a tape-slide presentation emphasizing personal death and overestimating its probability from various causes.

Ss were then retested on death anxiety measures, forms of which were counterbalanced within groups, hypothesizing that hypnosis and biofeedback Ss would increase death anxiety less than silence or suggestion control Ss.

Analysis of variance (at .05 and .01 confidence levels) did not significantly differentiate groups on either increases or decreases of death anxiety.

Previous studies demonstrating longer response latencies in associating to "death" as opposed to "neutral" words were not replicated.

Positive correlations ( $p < .01$ ) were obtained between two death anxiety scales, between "religious" response count on two word association tests, and among response latencies in associations to "death," "neutral," and "affective" words.

The possibility that death anxiety may be a "trait" as opposed to "state" phenomenon was raised following failure to experimentally increase or decrease this variable.

Suggestions for methodological refinement were made, along with suggestions for outcome studies of long-term existentially oriented therapies.

## INTRODUCTION

### Statement of the Problem

The relative effects of hypnosis, EEG alpha biofeedback training, prestige suggestion (control), and silence (control) in attenuating experimentally induced increases in death anxiety were investigated in the present study.

Treatments preceded a tape-slide presentation emphasizing the inevitability of personal death and over-emphasizing the probability of death from various causes.

The attenuation of situationally-induced increases in death anxiety was considered more clinically relevant than reduction of previously existing anxiety, since individuals often seek professional aid before entering situations perceived as hazardous (such as air travel).

### Existence of Death Anxiety

Stekel (1908) and Hall (1915) believed that the fear of death underlies all fears and phobic reactions. While the terms "fear" and "anxiety" have been used interchangeably, "anxiety" seems more accurate in reference to death since it represents an unknown, whereas "fear" more appropriately refers to definite objects (Stekel, 1908). While anxiety about death may situationally manifest itself as fear of a death-dealing and pain-producing object, Choron (1964) asserts that it is the prospect of not being anymore that makes most men abhor death rather than the fear of pain that accompanies dying, and Stekel states

that anxiety "in the last resort" is anxiety of the annihilation of the ego.

Freud (1915, 1923, 1926a), however, opposed the concept that death anxiety is primal or prototypic anxiety:

The high-sounding phrase, "every fear is ultimately the fear of death" has hardly any meaning. . . . It is indeed impossible to imagine our own death; and whenever we attempt to do so we can perceive that we are in fact still present as spectators. . . . It seems to me, on the contrary, perfectly correct to distinguish the fear of death from dread of an object (realistic anxiety) and from neurotic libidinal anxiety. It presents a difficult problem to psycho-analysis, for death is an abstract concept with a negative content for which no unconscious correlative can be found. It would seem that the mechanism of the fear of death can only be that the ego relinquishes its narcissistic libidinal cathexis in very large measure--that is, that it gives up itself, just as it gives up some external object in other cases in which it feels anxiety. . . . These considerations make it possible to regard the fear of death, like the fear of conscience, as a development of the fear of castration. The great significance which the sense of guilt has in the neuroses makes it conceivable that common neurotic anxiety is reinforced in severe cases by the generating of anxiety between the ego and the super-ego (fear of castration, of conscience, of death). . . . I am therefore inclined to adhere to the view that the fear of death should be regarded as analagous to the fear of castration.

The psychoanalysts Chadwick (1929) and Klein (1932) took issue with Freud and maintained the converse of his formulation: that castration fear is a derivative of the fear of death, and the fear of death reinforces it as opposed to being analagous to it.

Similarly, Choron (1964) quotes Boutonier, who believed that "neurotic anxiety is an anxiety of death" and "justifies the intuition of Heidegger that anxiety reveals Nothingness, since the destructive pulsations tend toward annihilation of being."

Becker (1973), from an existential perspective, summarizes these concepts while acknowledging Freud's contribution:

. . . the idea of death, the fear of it, haunts the human animal like nothing else; it is a mainspring of human activity--activity designed largely to avoid the fatality of death, to overcome it by denying in some way that it is the final destiny for man. . . . The argument of those who believe in the universality of the innate terror of death rests its case mostly on what we know about how effective repression is . . . everything that man does in his symbolic world is an attempt to deny and overcome his grotesque fate. . . . Freud's dogged insistence on man's creatureliness explains almost all by itself why he insisted on an instinctual view of man, that is, it explains what is wrong with psychoanalytic theory. At the same time, with a slight twist to that theory, such as was given first by Rank . . . , the psychoanalytic emphasis on creatureliness emerges as the lasting insight on human character. . . . Today we realize that all the talk about blood and excrement, sex and guilt, is true not because of urges to patricide and incest and fears of actual physical castration, but because all these things reflect man's horror of his own basic animal condition. . . . It is not the parents who are the "castrators," but nature herself. . . . Consciousness of death is the primary repression, not sexuality . . . this is the repression on which culture is built. . . .

The problem of fear of death was a significant part of the debate between Rank (1912) and Freud (1926b) over birth trauma, which ultimately resulted in the severance of professional association between the two theorists. In Rank's view, the child experiences fear of annihilation at birth and, for the unconscious, birth and death become interchangeable symbols:

. . . the fearful idea of death as a scythe-bearer, who severs one sharply from life, is to be traced back to the primal anxiety which man reproduces for the last time in the last trauma, in the last breath at death, and so gains from the greatest anxiety, namely, that of death, the pleasure of denying death by again undergoing the birth anxiety . . . the Unconscious conceives dying as a return to the womb. . . .

Freud criticized this premise because ". . . we cannot imagine as existing in the foetus anything which in the least approaches any sort of knowledge of the possibility of death as an outcome."

Other authors have interpreted the reluctance of Freud and other

psychoanalysts to see the fear of death as anything more than a derivative of castration fear as a manifestation of personal defenses. Wahl (1959) writes:

It is interesting also to note that anxiety about death, when it is noted in the psychiatric literature, is usually described solely as a derivative and secondary phenomenon, often as a more easily endurable form of "castration fear." There is good clinical evidence that this kind of displacement occurs. . . . But it is also important to consider if this formulation also subserves in part a defensive need on the part of psychiatrists themselves.

Some go further in suggesting that the sexual (rather than existential) orientation of psychoanalytic theory, along with the formulation of death instinct, may be related to Freud's personal handling of death anxiety. Choron (1964) states:

Freud also tried to deal with it; . . . his theory of the death drive should perhaps be seen as such an attempt to come to terms with death. . . . Seen in a wider, philosophico-biological context sexuality is the instrument with which life, however imperfectly as far as the individual is concerned, can and does overcome death. That Freud was very much preoccupied with the latter may account for his "bitterness" of which Jung speaks. It is also significant in this connection that his two well-publicized fainting spells of which Jung was a witness, occurred when the discussion revolved either around "peat-bog corpses" . . . or about graves and mummies of Egyptian kings.

Schur (1972), Freud's physician in later life, provides a lengthy account of Freud's personal and pervasive death anxiety, including the fainting spells when death content was under discussion, preoccupation with dates at which he feared he might die, his phobia of travelling by train, and his admission that "My own superstition has its roots in suppressed ambition (immortality) and in my case takes the place of that anxiety about death which springs from the normal uncertainty of life . . . ." With regard to the death of Freud's friend, Von Freund,

Schur notes that ". . . in Freud's estimation facing suffering and death with 'heroic' awareness was an obligation for one who, through analysis, should have learned to master his fear in the face of this supreme test." As did Choron (1964), Schur posits: "Could it be that uncovering a 'death instinct' permitted Freud literally to live with the reality of death . . .?"

Similarly, Rank wrote (1936):

. . . even when he finally stumbled upon the inescapable death problem, he sought to give a new meaning to that also in harmony with the wish, since he spoke of death instinct instead of death fear. The fear itself he had meantime disposed of elsewhere, where it was not so threatening . . . made the general fear into a special sexual fear (castration fear) . . . to cure this fear through the freeing of sexuality.

In summation of these views, it may be said that Freud was especially prone to death anxiety which he sought to alleviate by dogmatizing sexuality as both cause and cure. With respect to the former, Becker (1973) observes:

Unlike most men, Freud was conscious of death as a very personal and intimate problem. He was haunted by death anxiety all his life and admitted that not a day went by that he did not think about it. . . . Even as a young man he was in the habit of taking leave of friends by saying "Goodbye, you may never see me again."

Regarding the latter, Jung (1965) quotes Freud as saying "My dear Jung, promise me never to abandon the sexual theory. . . . You see, we must make a dogma of it, an unshakable bulwark."

A review of the theoretical literature, then, makes it possible to distinguish two positions:

1) The existential view of death anxiety as the primal repression, with sexual anxieties as derivatives; and



2) The psychoanalytic view of sexual anxiety as the primal repression, with death anxiety as a derivative.

Empirical evidence for the existence of death anxiety has been gathered in two ways: by questionnaires, and by indirect projective and/or physiological methods.

Examples of questionnaires most frequently employed are Lester's Fear of Death Scale (1966), Templer's Death Anxiety Scale (1970), and Dickstein's Death Concern Scale (1972). These instruments use items such as "I am very much afraid to die" and "I have fantasies of my own death."

Indirect methods include reaction time and galvanic skin response on word association to "death" and "neutral" words (Alexander, Colley, & Alderstein, 1957), emotional associations to "death" words (Templer, 1970), latency in reading the colors of death and non-death words (Feifel and Branscomb, 1973), word association to "death homonyms" (Pettigrew and Dawson, 1975), and projective techniques such as the Thematic Apperception Test.

In general, indirect methods have supported the death anxiety hypothesis while questionnaires have not, possibly because questionnaires have been less effective in bypassing the operation of defenses.

Alexander and Alderstein (1960), in reviewing the questionnaire studies of Hall, Schilder, Middleton, and Stacey, concluded that "on a conscious, verbal level people in our culture do not seem to be seriously concerned with thoughts of death." This finding seemed incongruous to them, and inspired the research question "Is death a matter of indifference?" (1957). "It seems rather strange," they

reasoned, "that the evidence from other disciplines would indicate that man is anything but indifferent to the problem of death while the evidence from psychology would relegate concern to special states." Noting that most studies used questionnaires or interview techniques, the authors suggested that "Perhaps with regard to death one does not always say what one feels." In a test of this hypothesis, 31 male Princeton undergraduates were asked to give associations to "basal," "affective" (school and sex), and "death" words. They concluded that death is not a matter of indifference, since compared with "basal" words, both "affective" and "death" words yielded longer response latencies and increased psychogalvanic skin responses (significant at the .01 level of confidence).

Other studies have confirmed the power of indirect methods over questionnaire-interview techniques in detecting death anxiety, in differentiating populations expected to be more death anxious from control groups, and in avoiding the confounding of results through the operation of defense mechanisms.

Questionnaire-interview methods failed to find relatively more death anxiety in groups characterized by old age (Feifel & Branscomb, 1973), somatic pathology (Templer, 1971b; Lucas, 1974; and Hoblit, 1972), loss of someone close (Durlak, 1973; and Feifel & Branscomb, 1973); nearness to death (Feifel & Branscomb, 1973 and Durlak, 1973); imminent death or "close calls" (Durlak, 1973); and risk or lethality of suicide attempt (Tarter, et al., 1974).

Moreover, questionnaire-interview techniques have been negatively correlated with religiosity, suggesting their vulnerability to this

defense (Feifel & Branscomb, 1973; Templer, 1972; Feifel, 1974; and Cerny, 1975).

Indirect methods, on the other hand, have related death anxiety to both old age and nearness to death (Feifel & Branscomb, 1973), and found no differences between religious and non-religious Ss (Alexander & Alderstein, 1960) or students and older Ss who had "psychic" beliefs (Pettigrew and Dawson, 1975).

### Increasing Death Anxiety

One premise of the present study is that death anxiety may be increased in life-threatening situations or situations perceived as such (e.g., air travel), and in consciousness-of-mortality enhancing experimental situations. If death anxiety can be attenuated in the latter, the possibility that this can be accomplished in the former is increased. Such a result would be of practical clinical usefulness.

Two studies support the conclusion that death anxiety can be increased by experimental manipulation.

Boyar (1964) had students complete a fear of death scale before and after a film depicting either traffic accidents or traffic congestion, and found that the "accident" group showed a significantly greater increase in fear of death than the "congestion" group.

Osarchuk and Tatz (1973) exposed 60 undergraduates scoring high or low on a belief in afterlife (BA) scale to a death threat, shock threat, or control treatment. The death threat consisted of a tape-slide presentation overemphasizing the likelihood of death by various causes. Only high believers exposed to death threat showed an increase in score

on an alternate BA scale, while scores for the other five groups remained unchanged. This suggests that Ss whose chief defense against death anxiety was belief in afterlife found it necessary to increase their defense after exposure to death threat, implying the mediation of increased death anxiety.

#### Attenuation of Death Anxiety

In addition to repression and avoidance, individuals seek to alleviate death anxiety by both cognitive and experiential means.

Cognitive methods include religious beliefs and/or intellectualizations. Evidence indicates that religious beliefs may not be completely effective in attenuating death anxiety, although believers report them to be so (Alexander & Alderstein, 1960; Pettigrew & Dawson, 1975). Choron (1964) provides an excellent review of numerous other cognitive approaches, of which the Epicurian view may serve as a non-religious example. Epicurus (Translated 1940) stated "So death, the most terrifying of all ills, is nothing to us, since so long as we exist death is not with us, but when death comes, then we do not exist." Choron counters, however, "Epicurus's argument has . . . one fatal flaw in that it overlooks the crucial point that it is precisely the very fact that we shall be no more that troubles most men."

Cognitive methods typify what Gold and Ollendorff (1974) call the "unencounter" approach, which they and others consider contributive to psychopathology (June, 1959; Wahl, 1959; and Bulka, 1974). Encounter, in their view, necessitates discarding the historical Western need for certainty and a willingness to live fully in the present, while

coexisting with the future and the unknown. Similarly, Choron finds solace in the question posed by Leibniz, "Why is there something rather than nothing?"

Experiential techniques enumerated by Choron (1964) range from contemplation of the stars (suggested by Spinoza, Lucretius, and Ptolemy) to the enlightenment experience of the meditating Buddhist. Psychological methods may also be classified as largely experiential. Treatment of phobias has been reported by use of psychoanalysis (Freud, 1924), systematic desensitization (Lazarus, 1961), and biofeedback (Lawrence, 1972), although outcome studies with all three techniques have frequently failed to control for placebo effects and spontaneous remissions (Malan, 1973; Russell, 1974; Driessen, et al., 1974; Strayer, Scott, & Bakan, 1973; Grynol & Jamieson, 1975; Valle & Levine, 1975; and Nall, 1973). If the position of Stekel and Hall, that death anxiety underlies all phobias, is adopted, phobia remissions may be considered evidence of death anxiety attenuation. Moreover, Murray (1974) reduced Templer scale death anxiety in nurses through a program of death education.

The present study investigated whether EEG alpha biofeedback training and hypnosis could attenuate experimentally-induced increases in death anxiety.

### Summary and Hypotheses

A review of the theoretical literature on death anxiety yielded two positions: the existential view of death anxiety as the primal repression, with sexual anxieties as derivatives; and the psychoanalytic view of sexual anxiety as the primal repression, with death anxiety as a derivative.

A review of the empirical literature indicates that, regardless of its origin, death anxiety exists as a significant psychological problem.

That death anxiety can be increased by experimental manipulation and by life-threatening situations is suggested by empirical evidence and clinical experience, respectively.

Attenuation of death anxiety by non-psychological means has been incompletely investigated, and studies that have been performed yielded equivocal results.

Alleviation of death anxiety by psychological methods, including death education and treatment of phobias by desensitization or analytic psychotherapy, have been reportedly effective, though outcome studies often failed to control for placebo effects and spontaneous remissions.

Hypotheses of the present study were that measures of death anxiety would increase following a tape-slide presentation overemphasizing death threats in everyday life, but that increases would be significantly lower for hypnosis and EEG biofeedback groups than for silence and prestige suggestions control groups.

## METHOD

### Subjects

Ss were 40 female undergraduate volunteers attending Louisiana State University who were told that the experiment would involve answering personal questions on a number of topics, word association, a brief interview, and a tape-slide presentation. They were further informed that the study might also include hypnotic induction or electroencephalographic alpha rhythm biofeedback. Ss were warned that portions of the experiment might be anxiety provoking for some people, and that anyone who had recently undergone a personal tragedy such as the death of someone close to them, or who had experienced great difficulty in adjusting to such situations should not volunteer. Volunteers were told that they could terminate the experiment at any time, that results would remain confidential and anonymous, that extra course points would be awarded for participation (with permission of instructor), and that the only feedback they could expect would be percent alpha production on the EEG frequency analyser or depth of hypnosis rating, if assigned to those treatments. Every effort was made to eliminate persons exhibiting severe psychopathology during initial interview, reduce anxiety that might arise as a result of the experiment, and debrief Ss as to the nature of the study prior to dismissal.

### Instruments

#### Interview Questionnaire

The questionnaire in Appendix A was generally followed by E during

initial interview, but clinical judgment was exercised in asking additional questions in order to screen out Ss for whom the experiment might be overly stressful.

### Word Association Tests

Items on the reaction time word association test (RTWAT) are listed in Appendices B (Form 1) and C (Form 2). Included are ten "death" words, ten "affective" words, and ten "neutral" words, with "death" and "neutral" words matched for word frequency using the Thorndike and Lorge word count (1944). "Death" and "neutral" words are those of the Feifel and Branscomb wordlist (1973). In assigning words to categories, each of two independent judges had only one disagreement with E's assignment, with discrepancies involving different words.

Following Alexander, Colley, and Alderstein, a comparison between "affective" and "neutral" words was included as a check on the adequacy of the measure, while the comparison of interest was differences in reaction time to "death" and "neutral" words. A measure of "emotionality" and "religiosity" of responses was also taken as an incidental variable. In their 1957 study, Alexander, et al. found that both "death/neutral" and "affective/neutral" reaction time comparisons were significant at the .01 level of confidence, while reaction times to "affective" and "death" words did not significantly differ. In her review of word association techniques, Cramer (1968) cites 11 studies demonstrating slower reaction times for "emotional" words than for "neutral" words in samples of college students, children, adolescents, parachutists, LSD Ss, and psychiatric patients.



The emotional response word association test (ERWAT) required Ss to write down ten associations to the words "death" (Form 1, Appendix D) or "die" (Form 2, Appendix E), and to four "non-death" words. Responses were judged "emotional" and/or "religious." Templer (1970) used this technique, following Rapaport (1946) who maintained that affective responses in a word association test represent an association disturbance. He obtained a correlation of .41 (significant at the .01 level of confidence) between the number of responses considered descriptive of emotions and his death anxiety scale (DAS). Ten independent judges yielded a correlation of .31 (significant at the .05 level of confidence) between the two variables.

#### Death Concern Scale (DCS)

Items on DCS (Dickstein, 1972) are given in Appendices H (Form 1) and I (Form 2), with scores on each item ranging from 1 (strongly disagree) to 4 (strongly agree) or 1 (never) and 4 (often). Items are written so that agreement represents high death concern on some items and disagreement high death concern on others, to control for acquiescence response set. The potential DCS range is 30 to 120.

In 151 female undergraduates, eight-week retest reliability was .87, and in 193 undergraduates all measures of internal consistency are above .85. DCS was positively related to state anxiety, trait anxiety, and sensitization for females, and to manifest anxiety for males and females. Since the correlation between DCS and manifest anxiety accounts for only 13% of the common variance, Dickstein concludes they are not synonymous constructs. He interprets the DCS correlation with sensitization on the Byrne Repression-Sensitization scale in two ways: 1) High

DCS Ss are characterized by the defensive strategy of acknowledging threatening stimuli whereas low DCS Ss tend to avoid such acknowledgment; or 2) High death concern Ss are more anxious than low DCS Ss.

### Death Anxiety Scale (DAS)

Appendices F and G are forms of DAS developed by Templer (1970). Using 31 college Ss, Templer found that DAS yielded a three-week test-retest reliability of .83, and an internal consistency coefficient of .76 (Kuder-Richardson Formula 20). When 21 presumably high death anxiety psychiatric patients were compared with a control group matched for diagnosis, sex, and approximate age, mean DAS scores were 11.62 and 6.77 respectively (a difference significant at the .01 level of confidence). Templer concluded that psychiatric patients who spontaneously verbalize death concern have higher DAS scores than other psychiatric patients. On administering DAS to 76 college undergraduates, Templer obtained significant correlations with the Lester fear of death scale (FOD), MMPI scales K, Pd, and Si, Welsh Anxiety Scale, Manifest Anxiety scale, and affective responses to the word "death" on a word association task. Coefficients for scales Pd and K of MMPI were  $-.24$  ( $p$  less than .05) and  $-.43$  ( $p$  less than .01) respectively, while scale Si correlated  $.25$  ( $p$  less than .05), indicating that Ss in the sample did not demonstrate high degrees of pathology or "fake good" response tendencies when considered as a group. The product-moment correlation coefficient between DAS and the Social Desirability scale was insignificant ( $r=.03$ ), implying that this response set was not related to DAS responses. Welsh Anxiety Scale and Manifest Anxiety Scale correlations with DAS were  $.39$  and  $.36$  respectively ( $p$  less than .01), suggesting that death anxiety and

general anxiety are positively related. The FOD and DAS correlation of .74 ( $p$  less than .01) was considered evidence for the validity of both scales. The correlation of .41 ( $p$  less than .01) between DAS and number of affective responses to the word "death" in word associations of the original sample, and replication correlation of .31 ( $p$  less than .05) with an additional sample of 48 undergraduates provide projective confirmation of DAS validity. DAS is scored by means of an objective key, with a maximum score of 15. Scoring of agreement with items varies to control for acquiescence response set.

#### EEG Frequency Analyser

Using occipital leads with the Autogen 70 EEG frequency analyser, Ss were trained for (8-13 cps,  $\geq 10$  uV) alpha rhythm production in a brief baseline session and a more lengthy alpha contingent auditory feedback training session. Ss were included in the EEG feedback group who increased percent-time alpha (alpha index) and/or alpha amplitude.

Several recent studies have replicated earlier findings (Berger, translated 1969; and Werre, 1957) that alpha and anxiety are negatively correlated (Utz & Banikiotes, 1973; Siciliani, Schiavon, & Tansella, 1975; Meyer, 1973; and Morishige & Reyher, 1975).

Other studies have suggested that alpha may be an artifact of motor or physiological activity, especially tremor in the orbit of the eye (Novikova, 1972; Bridgwater, Sherry, & Marczynski, 1975; Paskewitz & Orne, 1973; Klinger, Gregoire, & Barta, 1973; Nunn & Osselton, 1974; Verbaten, Beaujon, & Sjouw, 1975; Nebylitsin & Krupnov, 1972; Shiomi, 1972; and Miszczak & Golec, 1972). Cavonius and Estevez-Uscanga (1974),

however, using a lateralization procedure, supported the hypothesis that alpha is under neural control rather than dependent on muscular tremor. Similarly, Beatty & Kornfield (1972) failed to replicate cardiac and respiratory correlates of alpha activity.

In recent years, much evidence has accumulated that Ss can learn to control the production of alpha rhythms through biofeedback training (Tarulevicz, 1972; Nowlis & Wortz, 1973; Regestein, et al., 1973; Travis, Kondo, & Knott, 1974; Kondo, Travis, & Knott, 1975; Bremner & Moritz, 1972; Kuhlman & Klieger, 1975; and Goesling, et al., 1974). Lawrence (1972) cites several studies demonstrating clinical usefulness of such procedures, many of which are characterized by reduction of anxiety.

The possibility that alpha control is due to placebo effects rather than biofeedback has been suggested by other studies (Driessen, et al., 1974; Strayer, Scott, & Bakan, 1973; Grynol & Jamieson, 1975; Valle & Levine, 1975; and Nall, 1973).

A review of the literature suggests that, while alpha production may be mediated by unknown variables, it is possible for Ss to exert control over it in biofeedback situations, which may be helpful in attenuating anxiety.

### Hypnotic Induction

Hypnosis was induced using the Stanford Hypnotic Susceptibility Scale, Form A (SHSS), modified for taped induction and inclusion of anxiolytic relaxation suggestions. Ss scoring 8-12 on the scale were included in the hypnotic group.

Weitzenhoffer and Hilgard (1959) provide norms for 124 undergraduates as well as high (8-12), medium (5-7), and low (0-4) cutoff

points for raw scores. One-day retest reliability, using alternate forms, is .83. Morgan, Johnson, and Hilgard (1974) retested 85 former Stanford University students on Form A of SHSS after an 8-12 year interval, and obtained a retest reliability of .60.

In establishing validity, Weitzenhoffer and Hilgard (1959) invited previously tested Ss who scored high or low on Part I (susceptibility section) of the scale to return for examination by two procedures.

In the first procedure, it was established that Part I of the scale predicted performance on Part II, which represents deeper aspects of hypnosis (chi square = 9.55;  $N = 42$ ;  $p$  less than .01). High scorers on Part I made distinctly better Ss on the whole than low scorers.

In the second procedure, nonstandard methods of hypnotic induction were employed, and it was concluded from results, for which precise correlational statements could not be made, that Ss refractory on the susceptibility scale are likely to be refractory to other methods of induction as well.

#### Tape-Slide Presentation

A tape-slide presentation (Appendix J) was employed, discussing in general the problem of coming to terms with personal mortality, and overemphasizing probability of death from various causes (such as accident or cancer).

Osarchuk and Tatz (1973) used such a presentation in studying the effects of induced death anxiety on belief in afterlife (BA), and found that Ss high on BA increased BA following experimental treatment (see introduction). Similarly, Boyar (1964) employed a film depicting traffic accidents to successfully increase death anxiety (see introduction).

### Procedure

Following initial interview (Appendix A), Ss for whom the experiment might be unduly stressful were eliminated but awarded course points (with permission of instructor) for time consumed.

Remaining Ss were then given word association tests (RTWAT and ERWAT), DCS, and DAS.

Word association stimuli were presented both orally and visually, and RTWAT responses were tape recorded to facilitate recording and re-checking of reaction times and to assure unobtrusive measurement. Responses judged emotional and/or religious by at least four of five judges were also recorded. ERWAT responses were judged emotional and/or religious by at least three of four judges. Religiosity measures were included to provide information as to the effect of this defense upon results. Forms of all four measures of death anxiety were counter-balanced within groups to control for pre-post practice effects.

Ss were then randomly assigned to four treatments, eliminating those who failed to reach criteria for inclusion in hypnosis and bio-feedback groups, with ten Ss per treatment:

- 1) Hypnosis, with anxiolytic relaxation suggestions;
- 2) Prestige suggestion, with anxiolytic relaxation suggestions without hypnotic induction (control group);
- 3) Alpha-contingent biofeedback; and
- 4) A 15 minute period of silence (control group).

All Ss were then shown the tape-slide presentation, followed by retesting of death anxiety on the four measures.

Mean differences on pre-post death anxiety measures among groups

were compared with analysis of variance, using .05 and .01 levels of confidence. Correlations among measures of death anxiety and religiosity were also computed.

It was hypothesized that groups 1 and 3 would yield less death anxiety increase than groups 2 and 4 (controls).

## RESULTS

### Main Effects

Measures of death anxiety were not significantly increased by tape-slide presentation (in silence or suggestion control groups) or decreased by experimental group treatments (hypnosis and EEG biofeedback).

Tables I-V present means, standard deviations, and analysis of variance summaries for main effect data, using the following measures of death anxiety: Death Anxiety Scale (DAS), Death Concern Scale (DCS), Emotional Response Word Association Test (ERWAT), "death" minus "neutral" word reaction times (D-N), and Emotional Response to Feifel Death Words (ERFDW).

### Variables Related to Reaction Time Measures

#### 1. Affective, Death, and Neutral Words:

On the Reaction Time Word Association Test (RTWAT), "affective" minus "neutral" word mean reaction times were not significantly altered by treatments in pre-post testing (Table VI).

Mean pre-test reaction times to "affective" (A), "death" (D), and "neutral" (N) words did not significantly differ (Table VII), and yielded significant positive inter-correlations (Table XII).

The correlation of .21 between "death" word reaction times (D) and Death Concern Scale (DCS) represents a non-significant trend ( $p=.06$ ), while DCS correlations with "neutral" ( $r=.08$ ;  $p=.49$ ) and "affective"



TABLE I  
DEATH ANXIETY SCALE (DAS) PRE-POST MEAN SCORES, STANDARD  
DEVIATIONS, AND ANALYSIS OF VARIANCE SUMMARY FOR FOUR  
GROUPS

<u>Group</u>	<u>Pretest</u>		<u>Posttest</u>	
	<u>Mean</u>	<u>SD</u>	<u>Mean</u>	<u>SD</u>
Silence	4.00	2.11	3.50	1.58
Suggestion	3.40	1.43	3.00	1.33
Hypnosis	3.80	1.99	3.10	1.45
Biofeedback	4.40	2.32	4.20	1.75

  

<u>Source</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>Prob &gt; F</u>
Group	3	4.48	1.03	0.39
Subject (Group)	36	4.36		
Time	1	4.05	2.07	0.16
Residual	36	1.95		
Group X Time	3	0.22	0.11	0.95
Residual	36	1.95		

TABLE II  
DEATH CONCERN SCALE (DCS) PRE-POST MEAN SCORES, STANDARD  
DEVIATIONS, AND ANALYSIS OF VARIANCE SUMMARY FOR FOUR  
GROUPS

<u>Group</u>	<u>Pretest</u>		<u>Posttest</u>	
	<u>Mean</u>	<u>SD</u>	<u>Mean</u>	<u>SD</u>
Silence	35.60	6.42	35.40	4.95
Suggestion	34.00	7.66	36.40	8.63
Hypnosis	35.00	4.19	37.20	6.25
Biofeedback	38.60	8.44	39.40	5.70

  

<u>Source</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>Prob &gt; F</u>
Group	3	60.60	0.81	0.50
Subject (Group)	36	75.22		
Time	1	33.80	2.32	0.13
Residual	36	14.54		
Group X Time	3	7.53	0.52	0.68
Residual	36	14.54		

TABLE III  
EMOTIONAL RESPONSE WORD ASSOCIATION TEST (ERWAT) PRE-POST  
MEAN SCORES, STANDARD DEVIATIONS, AND ANALYSIS OF  
VARIANCE SUMMARY FOR FOUR GROUPS

<u>Group</u>	<u>Pretest</u>		<u>Posttest</u>	
	<u>Mean</u>	<u>SD</u>	<u>Mean</u>	<u>SD</u>
Silence	1.70	1.06	1.80	0.79
Suggestion	1.80	1.14	1.60	1.17
Hypnosis	1.60	1.84	0.90	0.88
Biofeedback	1.70	1.83	1.70	1.42

  

<u>Source</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>Prob&gt;F</u>
Group	3	1.10	0.64	0.60
Subject (Group)	36	1.72		
Time	1	0.80	0.45	0.51
Residual	36	1.76		
Group X Time	3	0.63	0.36	0.78
Residual	36	1.76		

TABLE IV

"DEATH" MINUS "NEUTRAL" WORDS (D-N) PRE-POST MEAN REACTION  
TIMES, STANDARD DEVIATIONS, AND ANALYSIS OF VARIANCE FOR  
FOUR GROUPS

<u>Group</u>	<u>Pretest</u>		<u>Posttest</u>	
	<u>Mean</u>	<u>SD</u>	<u>Mean</u>	<u>SD</u>
Silence	-0.12	1.07	0.15	1.01
Suggestion	-0.15	0.79	-0.04	0.45
Hypnosis	0.11	1.43	-0.41	0.10
Biofeedback	0.20	0.48	0.00	0.94

  

<u>Source</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>Prob&gt; F</u>
Group	3	0.25	0.23	0.87
Subject (Group)	36	1.08		
Time	1	0.14	0.20	0.66
Residual	36	0.70		
Group X Time	3	0.61	0.87	0.53
Residual	36	0.70		

TABLE V

EMOTIONAL RESPONSE TO FEIFEL "DEATH" WORDS (ERFDW) PRE-POST  
 MEAN SCORES, STANDARD DEVIATIONS, AND ANALYSIS OF  
 VARIANCE SUMMARY FOR FOUR GROUPS

<u>Group</u>	<u>Pretest</u>		<u>Posttest</u>	
	<u>Mean</u>	<u>SD</u>	<u>Mean</u>	<u>SD</u>
Silence	0.10	0.32	0.30	0.67
Suggestion	0.10	0.32	0.20	0.42
Hypnosis	0.30	0.67	0.20	0.42
Biofeedback	0.20	0.42	0.00	0.00

  

<u>Source</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>Prob &gt; F</u>
Group	3	0.08	0.48	0.70
Subject (Group)	36	0.18		
Time	1	-0.00	-0.00	1.00
Residual	36	0.24		
Group X Time	3	0.17	0.71	0.56
Residual	36	0.24		

TABLE VI

"AFFECTIVE" MINUS "NEUTRAL" WORD (A-N) PRE-POST MEAN REACTION  
TIMES, STANDARD DEVIATIONS, AND ANALYSIS OF VARIANCE  
SUMMARY FOR FOUR GROUPS

<u>Group</u>	<u>Pretest</u>		<u>Posttest</u>	
	<u>Mean</u>	<u>SD</u>	<u>Mean</u>	<u>SD</u>
Silence	0.38	1.21	0.25	1.50
Suggestion	0.18	0.89	0.11	0.42
Hypnosis	-0.07	1.49	-0.26	0.99
Biofeedback	0.68	1.07	-0.17	0.60

  

<u>Source</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>Prob&gt;F</u>
Group	3	0.91	0.66	0.59
Subject (Group)	36	1.39		
Time	1	1.92	2.01	0.16
Residual	36	0.95		
Group X Time	3	0.66	0.69	0.57
Residual	36	0.95		

TABLE VII

PRETEST MEAN REACTION TIMES TO "AFFECTIVE," "DEATH," AND  
 "NEUTRAL" WORDS AND ANALYSIS OF VARIANCE SUMMARY  
 ACROSS GROUPS

<u>Word Class</u>	<u>Mean</u>			
Affective	2.38			
Death	2.10			
Neutral	2.09			

  

<u>Source</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>Prob &gt; F</u>
Word Class	2	1.10	1.97	0.15
Residual	78	0.56		

( $r=.02$ ;  $p=.83$ ) word reaction times do not approach significance (Table XII).

## 2. Word Order:

On the Reaction Time Word Association Test (RTWAT), order of presentation of Feifel "death" stimuli (Table VIII) did not significantly affect results ( $p=.09$ ).

From highest to lowest mean reaction times, orders were ranked: first, fourth, third, second, and fifth.

## 3. Stimulus "Pull":

Mean reaction times to Feifel "death" stimuli on the Reaction Time Word Association Test (RTWAT) did not significantly differ (Table IX).

### Religious Responses

Religious responses to the words "death" or "die" (RRWDD, Table X) and to Feifel "death" words (RRFDW, Table XI) were not significantly altered by treatments.

A significant correlation of .35 ( $p < .01$ ) was obtained between the two measures (Table XII).

### Correlations Among Measures

Table XII contains six correlations significant at the .01 level of confidence.

Two scales of death anxiety, DAS and DCS, yielded a positive correlation of .53.

"Death" word minus "neutral" word (D-N) and "affective" word minus "neutral" word (A-N) reaction times yielded a correlation of .57.



TABLE VIII

MEAN REACTION TIMES BY WORD ORDER TO FEIFEL "DEATH" WORDS  
AND ANALYSIS OF VARIANCE SUMMARY ACROSS GROUPS AND TIME

<u>Word Order</u>	<u>Mean</u>			
First	2.40			
Second	1.76			
Third	2.23			
Fourth	2.36			
Fifth	1.74			
<u>Source</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>Prob &gt; F</u>
Word Order	4	4.19	2.03	0.09
Residual	156	2.07		

TABLE IX

MEAN REACTION TIMES TO FEIFEL "DEATH" STIMULI AND ANALYSIS  
OF VARIANCE SUMMARY ACROSS GROUPS AND TIME

<u>Stimulus</u>	<u>Mean</u>			
Death	2.20			
Coffin	1.70			
Funeral	2.20			
Burial	1.96			
Grave	1.79			
Dying	2.61			
Cemetery	1.82			
Undertaker	2.27			
Suicide	2.76			
Skeleton	1.70			
<u>Source</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>Prob&gt; F</u>
ID	19	3.09		
Stimulus	9	2.81	1.21	ns
ID X Stimulus	171	2.31		

TABLE X  
RELIGIOUS RESPONSES TO WORDS "DEATH" OR "DIE" (RRWDD)  
MEAN SCORES, STANDARD DEVIATIONS, AND ANALYSIS OF  
VARIANCE SUMMARY FOR FOUR GROUPS

<u>Group</u>	<u>Pretest</u>		<u>Posttest</u>	
	<u>Mean</u>	<u>SD</u>	<u>Mean</u>	<u>SD</u>
Silence	1.20	1.14	0.60	0.70
Suggestion	1.30	1.34	1.60	1.65
Hypnosis	2.10	1.73	2.00	1.25
Biofeedback	1.30	1.34	1.20	0.92

  

<u>Source</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>Prob &gt; F</u>
Group	3	4.65	1.84	0.16
Subject (Group)	36	2.53		
Time	1	0.31	0.37	0.55
Residual	36	0.84		
Group X Time	3	0.68	0.81	0.50
Residual	36	0.84		

TABLE XI  
RELIGIOUS RESPONSES TO FEIFEL DEATH WORDS (RRFDW) PRE-  
POST MEAN SCORES, STANDARD DEVIATIONS, AND ANALYSIS  
OF VARIANCE SUMMARY FOR FOUR GROUPS

<u>Group</u>	<u>Pretest</u>		<u>Posttest</u>	
	<u>Mean</u>	<u>SD</u>	<u>Mean</u>	<u>SD</u>
Silence	0.10	0.32	0.10	0.32
Suggestion	0.00	0.00	0.00	0.00
Hypnosis	0.20	0.42	0.00	0.00
Biofeedback	0.10	0.32	0.10	0.32

  

<u>Source</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>Prob&gt; F</u>
Group	3	0.05	0.53	0.67
Subject (Group)	36	0.09		
Time	1	0.05	1.00	0.33
Residual	36	0.05		
Group X Time	3	0.05	1.00	0.41
Residual	36	0.05		

TABLE XII  
CORRELATIONS AMONG VARIABLES ACROSS GROUPS AND TIME

	DAS	DCS	ERWAT	D-N	ERFDW	RRWDD	RRFDW	A-N	D	N
DAS										
DCS	.53*									
ERWAT	.04	-.14								
D-N	.18	.11	-.20							
ERFDW	-.04	.02	.08	.16						
RRWDD	.05	-.05	-.19	.14	.09					
RRFDW	.13	.10	-.06	.12	-.11	.35*				
A-N	-.08	-.09	-.05	.57*	.09	-.03	-.07			
D	.18	.21	-.12	---	.19	.13	-.01	---		
N	-.02	.08	.09	---	.01	-.03	-.13	---	.47*	
A	-.11	-.02	.03	---	.11	-.06	-.20	---	.45*	.37*

\* Significant at  $p < .01$

"Death" word (D), "neutral" word (N), and "affective" word (A) reaction times were positively intercorrelated.

Religious responses to two "death" word association tests (RRFDW and RRWDD) were also positively correlated (.35).

No significant correlations were obtained among objective scales of death anxiety (DAS + DCS), projective measures of death anxiety (ERWAT + D-N + ERFDW), and measures of religious response to word associations (RRWDD + RRFDW).

A non-significant trend ( $p=.06$ ) was observed, however in the .21 correlation between reaction times to death words (projective measure D) and DCS (objective scale).

## DISCUSSION

### Absence of Main Effects

The finding that measures of death anxiety were not significantly increased by tape-slide presentation or decreased by hypnosis or bio-feedback suggests, but does not demonstrate, that death anxiety may represent a "trait" rather than "state" phenomenon. If so, it may prove to be more amenable to long-term therapeutic interventions such as existentially or psychoanalytically oriented approaches than by brief treatments similar to those explored here. The "trait" anxiety model appears more consistent with theories discussed above (Freud, Becker, Rank, and others).

With respect to hypothesized increases in death anxiety or religious content in control groups following tape-slide presentation, it should be noted that the present study is not a strict replication of Boyar (1964) or of Osarchuk and Tatz (1973).

Boyar employed a fear of death scale which may not be adequately comparable to DCS or DAS, although objective scales of death anxiety typically yield positive intercorrelations (see Table XII). While the tape-slide presentation of the present study included discussion and slides of traffic accidents, unspecified differences from Boyar's traffic accident film may partially account for discrepant results.

It was also hypothesized that the failure of association reaction times to "death" words in the present study to significantly change following treatments might have been affected by stimulus "pull."

Analysis of variance, however, did not yield significant differences in mean reaction times to Feifel "death" words across groups and time (Table IX).

The tape-slide presentation employed in the present study was modelled after that of Osarchuk and Tatz, who found increases on a belief in afterlife scale (BA) for high BA Ss following presentation. The projective measure of religious associations to "death" words in the present investigation may have contributed to discrepant results (Tables X and XI), since the data does not establish significant correlations between objective and projective death anxiety measures (Table XII). Present results support earlier studies (Alexander & Alderstein, 1960 and Pettigrew & Dawson, 1975) which suggest that religious orientation and levels of death anxiety are unrelated.

#### Projective Identification of Death Anxiety

The finding that reaction times to "neutral," "affective," and "death" words correlate positively rather than differing significantly fails to support the contrary results of Alexander, et al., 1957, and Feifel & Branscomb, 1973 (see introduction above). The former study employed a different wordlist unmatched by classes for word frequency; random word order; and uneven numbers of "affective," "basal," and "death" words. Word order does not account for discrepancies in results since its effect was found non-significant in the present study. It is possible, however, that use of equal numbers of "affective," "neutral," and "death" words in the present experiment affected results; "shock" value in the Alexander, et al. study may have been preserved by surrounding six "affective" and three "death" words with 18 "basal" words.



Feifel and Branscomb employed the wordlist in Appendices B and C excluding "affective" words. If the latter diminished "shock" effect of "death" words in present data, this may have contributed to discrepant findings. Unlike the present study, Feifel and Branscomb also tested older Ss (mean age = 39.9), Ss who were physically ill (50%), and Ss with histories of psychopathology (24%). It may be hypothesized that Ss with these characteristics are more anxious about death. Indeed, those authors found that old age and nearness to death were positively related to death anxiety.

Support for the hypothesis that reaction times to death words are related to other measures of death anxiety was not obtained from present data, although the correlation of .21 between this measure and DCS represents a non-significant trend ( $p=.06$ ) in this direction.

### Suggestions for Future Research

#### 1. Methodology:

If death anxiety is defined as a conscious phenomenon, methodological difficulties do not appear to be of great magnitude. Objective scales such as DAS and DCS have been developed which are convenient to administer and for which normative data are available. As discussed above, however, studies using such instruments often fail to differentiate criterion groups from controls (see Introduction); and denial of death anxiety on the conscious level appears to coexist in Ss who yield projective evidence of death anxiety on the non-verbalized level (Feifel and Branscomb, 1973).

Such results are to be anticipated if existentially oriented

theorists are taken seriously in their assertion that death is massively repressed, and may in fact be the "primal repression."

It follows from this point of view that exploration of projective measures of death anxiety would be more productive. At present, however, such techniques are not adequately refined. Problems in the present study, for example, indicate the importance of clearly differentiating effects of stimulus "pull," mode of presentation, stimulus matrix, and word order on association tests to "death" and comparison stimuli. In addition, projective death anxiety measures that would permit an accurate study of individual differences have not been developed. Future research may be helpful in clarifying these issues and exploring possible solutions.

## 2. Therapy:

The suggestion that death anxiety may represent a "trait" rather than "state" phenomenon implies that long-term therapies may be more realistically employed than brief treatments.

Outcome studies of more intensive therapies which include exploration of existential themes appears to be an appropriate direction for future research in this area.

Becker's theory that repression of death is the major dynamic of neuroses, from which sexual dynamics spring, suggests that existential emphasis in the context of traditional psychotherapy might be helpful in the treatment of neurotic patients.

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## A P P E N D I C E S

## APPENDIX A

Interview Questions

1. Age and date of birth?
2. Why did you volunteer?
3. Based on what you know and what you have heard about hypnosis, what do you think you would experience if hypnotized?
4. Have you in the past had any severe medical problems? Any present chronic illness? Have you had heart disorder, high blood pressure, fainting spells, rheumatic or scarlet fever, or brain damage?
5. Have you ever been administered chemical anesthetics such as ether or sodium pentathol? Did you have any adverse effects such as struggling when going under, requiring repeated administrations before the anesthetic could take effect, or afterwards severe nausea or headache?
6. Have you ever sought psychological or psychiatric help, or considered doing so? Give details.
7. Do you tend to be a nervous person?
8. Have you ever had thoughts you were ashamed of?
9. Have you smoked pot, dropped LSD, taken pills such as barbiturates or amphetamines, or any drug considered to be hallucinogenic?  
Frequency?
10. Have you ever had prolonged periods of being depressed? If so, were you able to identify a cause?
11. Have you ever been robbed of your thoughts?
12. Are you often moody, tend to have ups and downs, days you just feel "down in the dumps"? Can you identify a cause?

13. Do you find it easy to become so completely absorbed in a book or a movie that you become unaware of what's going on around you?
14. Do you like (or think you would like) flying in an airplane?
15. What in particular could scare you about flying?
16. Is it (would it be) easy for you to trust the pilot?
17. Have you ever, or do you now, practice any form of meditation?
18. Have you ever received alpha biofeedback?
19. Do you practice some form of religion? Have a religious membership? How often do you attend religious services? Do you consider yourself very religious?
20. Has anyone in your family, or someone very close to you, died in the past two years?

## APPENDIX B

Reaction Time Word Association Test: Form 1

This is an experiment that has to do with words. I'm trying to find out what other words come into a person's mind when he hears various words. When we begin, I would like you to listen while I say each word, and glance at the word which will be presented on a card I will place in front of you. Then you are to say the first word that comes into your mind. It could be any word that you are reminded of when I say the stimulus word. Don't think too much about your answer. Just say out loud the first word you are reminded of, no matter what that word is. Any questions? OK, here is the first word:

baggage

pain

death

desk

greedy

coffin

interesting

reckless

funeral

customer

ass

burial

shoemaker

anxious

grave

## APPENDIX C

Reaction Time Word Association Test: Form 2

This is an experiment that has to do with words. I'm trying to find out what other words come into a person's mind when he hears various words. When we begin, I would like you to listen while I say each word, and glance at the word which will be presented on a card I will place in front of you. Then you are to say the first word that comes into your mind. It could be any word that you are reminded of when I say the stimulus word. Don't think too much about your answer. Just say out loud the first word you are reminded of, no matter what that word is. Any questions? OK, here is the first word:

spelling

cry

dying

floor

abuse

cemetery

architect

slave

undertaker

advertisement

sex

suicide

tomato

hateful

skeleton

## APPENDIX D

Emotional Response Word Association Test: Form 1

Now I am going to say some more words, and I want you to write down the first ten words that come into your mind. Any questions? OK, here is the first word:

love

hate

paper

life

death

## APPENDIX E

Emotional Response Word Association Test: Form 2

Now I am going to say some more words, and I want you to write down the first ten words that come into your mind. Any questions? OK, here is the first word:

good

bad

pen

grow

die

## APPENDIX F

DAS I

Circle "T" if item is true, and "F" if item is false:

- T   F   I am very much afraid to die.
- T   F   It doesn't make me nervous when people talk about death.
- T   F   I am not at all afraid to die.
- T   F   The thought of death never bothers me.
- T   F   I fear dying a painful death.
- T   F   I am really scared of having a heart attack.
- T   F   I shudder when I hear people talking about a World War III.
- T   F   I feel that the future holds nothing for me to fear.



## APPENDIX G

DAS II

Circle "T" if item is true, and "F" if item is false:

- T   F   The thought of death seldom enters my mind.
- T   F   I dread to think about having to have an operation.
- T   F   I am not particularly afraid of getting cancer.
- T   F   I am often distressed by the way time flies so very rapidly.
- T   F   The subject of life after death troubles me greatly.
- T   F   I often think about how short life really is.
- T   F   The sight of a dead body is horrifying to me.
- T   F   I feel that the future holds nothing for me to fear.

## APPENDIX H

DCS  
FORM I

Answer the following items 1-often, 2-sometimes, 3-rarely, or 4-never:

- 1 2 3 4 I think about my own death.
- 1 2 3 4 I think about dying young.
- 1 2 3 4 I have fantasies of my own death.
- 1 2 3 4 I think of how I would act if I knew I were to die within a given period of time.
- 1 2 3 4 When I am sick I think about death.
- 1 2 3 4 When I am in an automobile I think about the high incidence of traffic fatalities.

Answer the following items 1-I strongly disagree, 2-I somewhat disagree, 3-I somewhat agree, or 4-I strongly agree:

- 1 2 3 4 I am much more concerned about death than those around me.
- 1 2 3 4 My general outlook just doesn't allow for morbid thoughts.
- 1 2 3 4 The prospect of my own death depresses me.
- 1 2 3 4 The knowledge that I will surely die does not in any way affect the conduct of my life.
- 1 2 3 4 I am afraid of dying.
- 1 2 3 4 Many people become disturbed at the sight of a new grave but it does not bother me.
- 1 2 3 4 Thinking about death is a waste of time.
- 1 2 3 4 The inevitable death of man poses a serious challenge to the meaningfulness of human existence.
- 1 2 3 4 The death of the individual is ultimately beneficial because it facilitates change in society.

## APPENDIX I

DCS  
FORM II

Answer the following items 1-often, 2-sometimes, 3-rarely, or 4-never:

- 1 2 3 4 I think about the death of loved ones.
- 1 2 3 4 I think about the possibility of my being killed on a city street.
- 1 2 3 4 I think about death just before I go to sleep.
- 1 2 3 4 I think about how my relatives would act and feel upon my death.
- 1 2 3 4 When I am outside during a lightning storm I think about the possibility of being struck by lightning.

Answer the following items 1-I strongly disagree, 2-I somewhat disagree, 3-I somewhat agree, or 4-I strongly agree:

- 1 2 3 4 I think people should first become concerned about death when they are old.
- 1 2 3 4 Death hardly concerns me.
- 1 2 3 4 The prospect of my own death arouses anxiety in me.
- 1 2 3 4 The prospect of the death of my loved ones arouses anxiety in me.
- 1 2 3 4 I envision my own death as a painful,nightmarish experience.
- 1 2 3 4 I am afraid of being dead.
- 1 2 3 4 I am disturbed when I think about the shortness of life.
- 1 2 3 4 Death should not be regarded as a tragedy if it occurs after a productive life.
- 1 2 3 4 I have a desire to live on after death.
- 1 2 3 4 The question of whether or not there is a future life worries me considerably.

## APPENDIX J

Tape-Slide Presentation Text

In our universe, there are two great human events: birth and death. Of the two, only death remains for those of us who have been born and are alive still. "In the midst of life," says the Book of Common Prayer, "we are in death."

Yet most of us seldom think of death, our death. We think and act as if we will never die. It is difficult to imagine our own death, and harder still to believe in the depths of our being that we will surely die. But each of us will die, no matter how we act or think or feel.

What is death? We do not know. Philosophers and priests and ordinary men have asked this question since the beginnings of recorded time. Many people have theories about death. Some say we will live on in an afterlife of some kind. Others say we will no longer exist, that we return to the great darkness that was before our birth; to Mother Night. Between these two darknesses, the existentialists say, we live and move and have our being.

But these are only theories; only thoughts, only hopes, only fears. What death is, we cannot know. No one has returned to tell us of death. We know not if the dead exist; if they do, they do not tell.

We observe that the dead body does not move, does not communicate, does not manifest the consciousness it once exhibited. We observe it decay, we see it broken down into the elements from which it was constructed, mingling with the earth. Omar Khayyam wrote:

Strange, is it not? that of the myriads who  
 Before us passed the door of darkness through  
 Not one returns to tell us of the road,  
 Which to discover we must travel too.

And each of us must indeed travel this road; and for most of us, it is impossible to know when. Despite all our science, death remains the great mystery. For many of us, this is the cruellest cut, the hardest part to take. Not to know the when of death, the how of death, the why of death, the what of death. We can believe, but we cannot know.

Some of us, like the soldier, lead lives of imminent danger. We are aware that death may come at any moment, and yet we cannot be precise in predicting our time, our moment. ~~But this, too, is the case~~ for all of us. Accident or illness could strike at any moment, in any place. There is no refuge from death, and no exit.

At current rates, we can predict that in our country, in this year, six million people will die. Of every hundred persons, three will die.\*

Of these, three million and twenty-four thousand will die of cardiovascular and renal disease. For many victims of heart attack, death will come swiftly. In the midst of life, we are caught by surprise.

This year cancer will cause one million, 242 thousand people to die. Other diseases will take the lives of one million, 200 thousand persons. While we can take steps to maintain our health, no one is immune to disease.

Some deaths are caused by the hands of man, terrible though it may

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\*(Actual 1975 death rate = .009; all figures given are based upon an inflated rate of .03.)

be. In our country, this year, 150 thousand people will die of murder. We have witnessed the murder of great and powerful leaders. Death is the great equalizer, taking the lives of kings as well as those of common men. No one is exempt from this threat. Murder is often committed for illogical reasons. Many victims of murder had no known enemies. Many did not even know their assailants. Their murder came as a surprise to their loved ones.

As a people, we have accomplished many wonderful things. We have set foot on the moon, and seen our world from a different perspective. Yet even the marvelous technology of our culture places us in constant danger of death. The nuclear bomb exists, and is as deadly as ever. Despite modern packaging, and government inspection, we are sometimes poisoned by our food. Our chief means of transportation, the automobile, is often the instrument of death. This year, we can expect 180 thousand Americans to die in traffic accidents. Other accidents will kill 204 thousand people.

Yet we seldom think of death. We do not fully realize that we will surely die. We busy ourselves with the everyday experiences of life, and put thoughts of death out of our minds. Nevertheless there comes a time for each of us when we think of our end. Carl Jung wrote:

When one is alone and it is night and so dark and quiet that one does not see or hear anything but the thoughts that add and subtract the years of one's life, and the long sequence of those unpleasant facts, which prove cruelly how far the hand of the clock has advanced, and the slow and uncheckable approach of that dark well, which threatens to swallow up irretrievably all I love, desire, possess, hope, and strive for; then all the wise dicta go into hiding, and fear descends upon the sleepless like a choking blanket.

Then we are left with the great mystery, of which there is no

knowledge, and from which there is no escape. As the saying goes, no one gets out of life alive. We cannot know death, and we cannot avoid death. From death, there is no exit.

### Slide Descriptions

(Underlined words in the above text signify change of slides)

1. Against starry sky, the hands of a skeleton thrust upward an embryo encased in a transparent amnionic bubble.
- 2-4 Closer views of (1).
5. Re-presentation of (1).
6. Physician delivering neonate.
7. Drawing of skulls.
8. Burial scene.
9. Boy standing alone in graveyard.
10. Simple desert grave.
11. Young woman walking in ghost-like surrealistic multiple exposure.
12. Body of fallen soldier.
13. Skull of cow on cracked earth.
14. Photograph of the late Janis Joplin.
15. Tombstones beneath tree upon which birds sit.
16. Corpse remains hanging after execution.
17. Body of fallen soldier.
18. Young soldiers praying in graveyard.
19. Flaming Hindenberg falling to earth.
20. Officials viewing bodies of automobile accident victims.
21. Several bodies of soldiers following battle.
22. Skeleton jogging, with caption: "Jogging Can Kill You."

23. Two tombstones.
24. Pistol firing into Lincoln's head.
25. Secret serviceman wounded in assassination attempt upon Franklin Roosevelt.
26. President Kennedy's automobile viewed through gunsights.
27. Drawing of fatal shot into the back of Kennedy's head.
28. Frames from Kennedy assassination film.
29. Kennedy funeral scenes, with widow.
30. Kennedy funeral procession, with flag-draped coffin.
31. Kennedy coffin lying in state with honor guard.
32. Automobile accident victim collapsed in rear seat of vehicle.
33. Photographer and loved ones bending over body.
34. View of planet earth from space.
35. Hand holding food can from which a mushroom cloud issues.
36. Automobile accident victims beside vehicle.
37. Fire in apartment building.
38. Man leaping from apartment fire.
39. Train wreck.
40. Salvadore Dali in foreground, with skull formed by human nudes.
41. Surrealistic painting of time and death, after Dali.
42. Bodies of soldiers in field.
43. Re-presentation of (1).



## VITA

C. Gary Pettigrew is a native of Baton Rouge, Louisiana. His undergraduate and graduate career was pursued at Louisiana State University, from which he received the B.A. degree in 1968 and the M.A. degree in 1974. He has been a doctoral candidate in clinical psychology at Louisiana State University since 1975. In addition to academic work, he has had experience as a consulting psychotherapist in private practice.

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